MAGNUSSON
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REMARKS/ARGUMENTS

Reexamination of the captioned application is respectfully requested.

A. SUMMARY OF THIS AMENDMENT

By the current amendment, Applicant basically:

1. Editorially amends the specification.
2. Respectfully traverse all prior art rejections.

B. SELECTED COMMENTS REGARDING THE DISCLOSURE

Applicant's code allocation unit and method allocates OVSF codes in a manner to enable users to operate at high data rate transmission/reception. *Allocation is performed by assigning new users to the part of the tree that contains the largest combined weight (e.g., the most number of users when all codes have the same weight).* Applicant's technique thereby keeps the number of users low in other parts of the tree, and thus increasing the probability that codes of these parts of the code tree will be free for high data-rate codes.

For example, in the scenario described with reference to specification Fig. 8, when a code of spreading factor SF=8 is required, Applicant assigns code G for use. Such assignment occurs primarily because ABCD has fewer users (one) than code EFGH (which has two users). The assumption is that, by presently assigning code G, there will be greater high lever code availability (for high data rate transmission/reception) when higher level codes are released in the non-selected part of the tree. For example, when the connection involving code AB is released, more of the code tree in the code region ABCD can be utilized if code G is now selected (which would not be the case if a code such as code C or code D were now chosen).

Aspects of Applicant's technique are represented by phraseology such as the following in independent claims 1, 11; 21:

> wherein, when a code of level k = i is requested for the connection, the node selects as an allocated OVSF code a free code of the i^{th} level whose *subtree structure from the root of the code tree has a largest combined weight, the combined weight being a sum of weights for all codes that are allocated in the subtree*

Claims 1 – 34 generally pertain to the general case in which the codes may be differently weighted. In a special case in which all codes have the same weight, aspects of Applicant's technique are represented by phraseology such as the following in independent claims 34 and 40:

> wherein, when a code of level k = i is requested for the connection, the method comprises selecting as an allocated OVSF code a free code of the i^{th} level *whose subtree structure from the root of the code tree has a greatest number of users.*

C. PATENTABILITY OF THE CLAIMS

Claims 1 and 21 stand rejected under 35 USC §102(e) as being anticipated by U.S. Patent Publication 2003/0081584 to Heo. Claims 1-9, 21-29, 35-38 and 40-43 stand rejected under 35 USC §102(e) as being anticipated by U.S. Patent 6,526,065 to Cheng. Claims 10-20, 30-34 and 39 stand rejected under 35 USC 103(a) as being unpatentable over U.S. Patent 6,526,065 to Cheng in view of U.S. Patent Publication 2002/0051431 to Choi et al. All prior art rejections are respectfully traversed for at least the following reasons.

1. U.S. Patent Publication 2003/0081584 to Heo

Heo purports to have a strategy for selecting optimum OVSF codes in a way that allegedly does not block assignment of other OVSF codes. Heo's strategy is cryptically

described, particularly in the paragraphs [00028] and [00058] noted in the Office Action. It appears that when Heo gets to a correct tree level corresponding to the requested spreading factor SF, Heo assigns a code by searching for a "leftmost" or "maximum optimum code number of the code tree" [0063]. Heo makes no teaching or suggestion of selecting a code whose *subtree structure from the root of the code tree has a largest combined weight* or *greatest number of users.*

2. U.S. Patent 6,526,065 to Cheng

U.S. Patent 6,526,065 to Cheng concerns assigning spreading codes to a user requesting a specific data rate n*R0 in such a way to minimize the number of codes needed for the specific user. In particular, Cheng determines an optimal codeword (one or multiple spreading codes) based on a different type of "weight" and a system codeword for a user: a codeword which has the maximum number of lowest-valued SF among the possible set of equivalent codewords and also occupies as few spreading codes as possible among these alternatives. Cheng is thus focused on an amount of codes and corresponding SF that shall be allocated for a user.

Applicant, by contrast, assigns a single code to a new user in such a way that the future availability for low SF codes is maximized. Applicant makes an allocation based on the sum of weights for already allocated codes in the code tree.

Applicant's "weight" typically corresponds to the probability of that a code will be available in the future whereas in U.S. Patent 6,526,065B the weight represents the maximum number of users that can be supported.

Note further that Applicant's dependent claims 2 – 5, 12 – 15, and 22 – 25 detail characteristics of the "weight" more specifically. Applicant's claimed "weight" is associated to the time duration of code allocation, whereas in Cheng weight is employed

entirely differently (maximum number of users that can be supported). U.S. Patent 6,526,065B describes determining optimal codeword based on a user defined weight, i.e., (column 4, line 19) as

$$W(C) = a1*2^6+a2*2^5+a3*2^4+a4*2^3+a5*2^2+a6*2^1+a7,$$

which is the same for all users, and has nothing to do with weights based on individual user behavior (claims 5, 15, and 25) or service type (claims 4, 14, and 24).

Thus, Cheng's column 4, lines 30-37, cited in the Office Action, is unavailing. In this passage Cheng merely gives an example of how to determine the good codeword out of a codeset where all codes has the same Cheng weight.

U.S. Patent 6,526,065 to Cheng describes how to identify the number of codes of different spread factor to support the user's data rate. In contrast, Applicant focuses on which code(s) to allocate based on different aspects such as service type, predetermined strategy etc.

Applicant's dependent claims 6, 16, 26, and 36, 41 describe a specific algorithm which is not taught or suggested by U.S. Patent 6,526,065 to Cheng.

U.S. Patent 6,526,065B assigns a user one or multiple codes to support a particular datarate in such a way to minimize the amount of small-SF codes marked as unavailable. Cheng does not teach or suggest how to allocate codes so that currently unavailable codes have a large probability of becoming available in the future.

Choi does not compensate for or rectify the deficiencies of either of the primary references, i.e., of neither U.S. Patent Publication 2003/0081584 to Heo nor U.S. Patent 6,526,065 to Cheng, and thus does not provide a basis of rejection for the independent

claims. Since Applicant believes that all independent claims are allowable and that sufficient explanation of patentability has been provided, rebuttal of combination rejections directed to various dependent claims does not appear necessary. However, should the Examiner persist in the same or different rejections, Applicant reserves the right to defuse such prior art rejections by further explanation of the patentable merit of pending dependent claims.

D. MISCELLANEOUS

In view of the foregoing and other considerations, all claims are deemed in condition for allowance. A formal indication of allowability is earnestly solicited.

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,
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